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L1: Entry 2 of 2

File: USPT

Sep 28, 1999

US-PAT-NO: 5959082DOCUMENT-IDENTIFIER: US 5959082 A

TITLE: Proteins catalyzing the extension of plant cell walls

DATE-ISSUED: September 28, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cosgrove; Daniel J.	State College	PA		
McQueen-Mason; Simon	York			GB
Guiltinan; Mark	State College	PA		
Shcherban; Tatyana	State College	PA		
Shi; Jun	State College	PA		

US-CL-CURRENT: 530/370, 530/324, 530/372, 530/375, 530/376, 530/377, 530/378, 530/379,  
530/412, 530/417, 530/418, 530/419

## CLAIMS:

What is claimed is:

1. A catalytic composition comprising an acidic medium and a salt-soluble polypeptide having a molecular weight of about 29-30 kD as measured by SDS-PAGE and an amino acid sequence of any of SEQ. ID. NO: 1 through SEQ. ID. NO:6, wherein the composition induces expansion of inert plant cell wall material.
2. A composition according to claim 1, wherein the acidic medium has a pH of about 5.5 to 3.5.
3. A composition according to claim 1, further comprising a sulphydryl reducing agent.
4. A composition according to claim 1, wherein the acidic medium comprises a member selected from the group consisting of sodium acetate and urea.
5. A composition according to claim 1, wherein the expansion is irreversible.
6. A composition according to claim 1, wherein the polypeptide is produced synthetically.
7. A composition according to claim 1, wherein the polypeptide is of plant origin.
8. A composition according to claim 7, wherein the polypeptide is derived from a plant family selected from the group consisting of cucumber, oat, broccoli, celery, tomato, cotton, flax, cabbage and corn.
9. A composition according to claim 1, wherein the polypeptide is derived from

cell wall material of a plant growing region.

10. A composition according to claim 9, wherein the plant is from the group consisting of cucumber, oat, broccoli, celery, tomato, cotton, flax, cabbage and corn.

11. A polypeptide comprising an amino acid sequence of any of SEQ ID. NO:1 through SEQ. ID. NO:6 and which induces an extension of plant cell wall material.

12. A polypeptide according to claim 11 having a molecular weight of from 25-30 kD as determined by SDS-PAGE.

13. A polypeptide according to claim 11 that is derived from cell wall material of a plant growing region.

14. A polypeptide according to claim 11 which induces the extension of plant cell wall material in the presence of an acid.

15. A polypeptide according to claim 14 wherein the acid has a pH of about 5.5 to 3.5.

16. A polypeptide having at least 60% sequence similarity to an amino acid sequence selected from the group consisting of SEQ. ID. NO: 1 through SEQ. ID. NO: 6 and which induces an extension of plant cell wall material.

17. A polypeptide according to claim 16 having a molecular weight of from 25-30 kD as determined by SDS-PAGE.

18. A polypeptide according to claim 16 having at least 70% sequence similarity to the amino acid sequence of SEQ ID. NO: 1.

19. A polypeptide of claim 16, wherein the amino acid sequence is SEQ. ID. NO: 1.

20. A polypeptide according to claim 19 having a molecular weight of from 25-30 kD as determined by SDS-PAGE.

21. A method of weakening [the] mechanical strength of cellulose comprising contacting a quantity of cellulose with a composition having at least one polypeptide comprising an amino acid sequence of any of SEQ. ID. NO: 1 through SEQ. ID. NO: 6.

22. A method according to claim 21, wherein the composition further comprises at least one of a sulphydryl reducing agent and an acid.

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L1: Entry 1 of 2

File: USPT

Dec 4, 2001

US-PAT-NO: 6326470

DOCUMENT-IDENTIFIER: US 6326470 B1

TITLE: Enhancement of accessibility of cellulose by expansins

DATE-ISSUED: December 4, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cosgrove; Daniel J.	Pennsylvania Furnace	PA		

US-CL-CURRENT: 530/370; 435/183, 435/195, 435/209, 530/372, 530/375, 530/376, 530/377,  
530/378, 530/379

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 2. Document ID: US 5959082 A

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Shcherban; Tatyana	State College	PA		
Shi; Jun	State College	PA		

US-CL-CURRENT: 530/370; 530/324, 530/372, 530/375, 530/376, 530/377, 530/378, 530/379,  
530/412, 530/417, 530/418, 530/419

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